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AUTHOR Grosse, Susan J.; McGill, Christine D.
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ABSTRACT

Techniques are described for teaching severely physically disabled persons to swim. Approaches begin with a discussion of water adjustment progression and proceed through achieving breath control, mobility, developing movement in a supine position, and developing recovery. The conclusion addresses such final steps toward independence as pool entry and exit. (CL)

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American Alliance for Health, Physical Education, Recreation and Dance
Physical Education and Recreation for the Handicapped: Information and Research Utilization Center
1201 16th Street, N.W., Washington, D.C. 20036

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INDEPENDENT SWIMMING FOR CHILDREN WITH SEVERE PHYSICAL IMPAIRMENTS

Susan J. Grosse
Christine D. McGill

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Christine D. McGill has joined Susan J. Grosse in presenting a comprehensive, step-by-step procedure for helping children with severe physical impairments become independent swimmers. This procedure was developed and used by the authors with students at Frederick J. Gaenslen School (Milwaukee, Wisconsin). This Practical Pointer provides information about functional, relevant techniques which have been extremely successful in helping children with severe physical impairments become independent swimmers. Many of these children regularly join friends and families in aquatic activities for fun, fitness, and recreation. To Christine McGill and Susan Grosse, thanks and appreciation are extended for their teamwork and willingness to share these ideas with others through the Practical Pointer series. Greatest benefactors of their efforts will be countless individuals with physical impairments whose lives are made happier and fuller because their aquatic instructors implement and apply these sound methods and practical techniques.

Note: A one-half inch black and white video-cassette, Independent Swimming for the Child with a Severe Physical Impairment, shows procedures and practices presented in this Practical Pointer. This video-cassette is available for free loan from Department of Physical Education, Division of Curriculum and Instruction, Milwaukee Public School System, P.O. Drawer 10X, Milwaukee, Wisconsin, 53201.

It started with curiosity about how a young boy with severe impairments from cerebral palsy could function in water. One doesn't usually think of a quadriplegic whose voluntary movements are extremely limited and whose speech is impaired as being a candidate for swimming instruction! Rather, such an individual is usually

This is Mark--our subject for demonstrating swimming for an individual with a severe physical impairment.

recommended for recreational water activities in which he/she is carried around in the water and/or supported by buoyant aids. Generally the individual has good social experiences but learns little, if anything, about swimming. However, severe physical impairments do not mean that individuals cannot become independent swimmers. It means that instructors must keep open minds to the potential for skill development, and develop highly individualized programs of instruction for each of these students.

WATER ADJUSTMENT

The place to start is with water adjustment. Many individuals with severe handicapping conditions have had little or no contact with swimming pool settings. Actually this is an ideal way to start! It is much more difficult to work with someone who has been in several different swimming programs or who has been exposed to a variety of aquatic instructors, especially if those programs and instructors had not stressed student independence. Because of such limited experiences, it is necessary to start at the very beginning -- the physical fact of being in water. Many individuals with severe physical impairments have either extremely limited movements or a great deal of extra, unwanted movements due to unpredictable muscle spasms. Nervousness, excitement, fear, or just concentration can increase muscle tensions, limit further voluntary movements, and increase involuntary actions. Therefore the primary goal in water adjustment is to make the individual comfortable in water.

Progressions in Water Adjustment

1. While the individual is still on land have him/her lie or sit on the edge of the pool, whichever is more comfortable for the student.

   . Explain to the student that you will...

      ...tell him/her ahead of time what is going to happen--what you are going to do and what the student will be doing.

      ...not do anything to the student that you do not tell him/her about.

   . Ask the student to show you...

      ...how he/she will indicate to you yes or ok if the student is not verbal.

      ...how the student will indicate to you no.

   . Get the student wet by cupping pool water into your hands and rubbing them over his/her body. Ask how it feels. When the student is wet over most of the body tell him/her that you are now going to help him/her get into the water!

2. Lift the student into the pool. An easy method is to turn the student on land so that he/she is lying on the stomach with feet toward the edge of the pool, head away from the pool edge and body perpendicular to the side. Then gently pull the individual backward, supporting him/her first at the waist and then at the armpits as the body is lowered into the water. Be sure you do what you promised earlier--tell the student what is happening and what is going to happen.

3. Once in the water, position the student with his/her back to you; support the student under the armpits with his/her back against the front of your body. Be sure the student's head stays above water.

4. While maintaining this vertical position, carry the student around the pool area. Move relatively slowly, talk to the student as you move, and tell him/her what you are doing. While walking make mental assessments of...

      ...the student's general reactions to water;

      ...amount of excessive, involuntary muscular activity taking place; and

      ...any voluntary actions done by the student.

5. If voluntary movements are excessive at this point it helps the student if you aid in containing them. The student can only concentrate on one thing at a time. If you assume responsibility for taking care of extra movements, the student can focus attention on the water. If extraneous movements are...

...in the arm and shoulder area, first use your hand position under the student's armpits to curl his/her shoulders slightly forward; then tuck one or both of his/her arms under yours to pin them down.

...in the lower trunk and or legs, curl the student's upper body forward while at the same time placing an arm under his/her knees and curling them towards the chest so that the student is sitting in your arms in almost a ball.

The first carrying position--help the student control excessive body movements.

In either or both of these positions extra movements are contained and the student can return attention to the water.

6. While carrying the student in the water, swish his/her body back and forth, turn in circles, bounce gently--vary movements so that the student can feel water moving in many different ways over his/her body.

7. As student relaxation in the water increases, gradually release the containment position until just the armpit support is use --this may take several sessions in the water.

8. While carrying the student in water gradually get his/her entire body wet, head and face included.

   . Gently rub water onto all dry surfaces.

   . Sprinkle water over the student's head as if he/she were in a shower.

   . Wash his/her face with a wash-cloth.

   . Pour water from your hand over the student's head.

   . Ring out a sponge over the student's head.

   . Wash his/her face with a sponge.

   . Have a sponge fight.

   . <u>Be creative</u>!

BREATH CONTROL

Comfort and relaxation in water develop over time. While a student is working on water adjustment he/she should also be working on breath control. Any form of independent swimming involves submersion of the face and breath holding. The time to start developing this is during the very first lesson.

Progressions in Developing Breath Control

1. Have the student practice opening and closing his/her mouth with the face out of water; be sure the student knows which position is which. Check to see that when his/her mouth is closed it is in a natural closed position, not with one lip tucked in or the teeth showing.

2. Tell the student that he/she is going to dunk all the way under water--be sure to emphasize closing mouth before going down and not opening it again until the head is up and out of water. Explain that you will say, ready, at which point he/she should take a breath and close the mouth. The student then dunks quickly and comes right back up.

Bobbing--ready, lift. Mark knows he has to take a breath.

Bobbing--the quick dunk under.

- Hold the student under the armpits in water that is deep enough for him/her to be dunked without hitting the feet on the bottom of the pool.
- Explain the dunk procedure.
- Say ready and watch to be sure that the student opens his/her mouth, takes a breath, and then closes the mouth.
- Lift the student up slightly.

. Quickly dunk the student under water, just to the top of his/her head.

. Bring the student up and tell him/her to take a breath--smile, praise the individual and tell him/her it was fun.

Lifting the student slightly before the dunk serves as a last reminder that he/she is going under--this is a kinesthetic ready signal and should be used before every dunk.

3. If the student swallows water or coughs...

...don't make a big thing about it.

...wait until he/she gets a breath and then remind him/her to close the mouth next time.

...after several dunks the student will get the idea and either close the mouth, or if that is not possible, learn to close off the back of the throat.

4. If the student cries...

...tell him/her what a goood dunk was accomplished.

...do something with which he/she is already familiar--play with a sponge or swish in water.

...do not tell him/her there is nothing of which to be afraid--in fact, do not mention fear at all. Assume that it is all right and the student will soon come to think this way also.

5. Repeat the quick dunk procedure several times throughout each lesson, doing it everytime the student comes swimming.

6. Help the student do bigger dunks. Use the same general procedure as for quick dunks, only go further under water and move just a little slower in the process.

7. Have the student practice holding the breath for several seconds. Keep his/her head out of water initially and check to see that the breath is actually being held. Have him/her take a breath, close the mouth, and hold the breath while you count to three--later count to five, seven, ten, or more to extend the time.

8. Do a big dunk and tell the student you will count to three and then bring him/her up. Remind the student to hold the breath while under water. Count loudly so the student can hear you under water; when you get to three bring him/her up immediately.

9. Extend gradually time under water during big dunks. Always tell the student how high you will count and then bring him/her up promptly.

10. As the student becomes familiar with the procedure for timed dunks, ask how high you should count before bringing him/her up. This places part of the situation under student rather than instructor control. It also begins the transition to independence while at the same time helping the student build accurate assessments of his/her own abilities. If the student should make an unrealistic request, don't tell him/her that this is wrong. Try it anyhow and let him/her have difficulty. Then bring the student up and talk about it. Ask if a mistake was made and if he/she would like to change the amount of time for the next dunk. Students need to have experiences of doing what they thought could be done so that they can determine for themselves their own capabilities.

Body positioning for breath control activities is basically the same as for water adjustment parts of lessons. The student should be supported under the armpits with his/her back to the instructor. Amount of freedom of movement allowed depends on voluntary muscle control of each student.

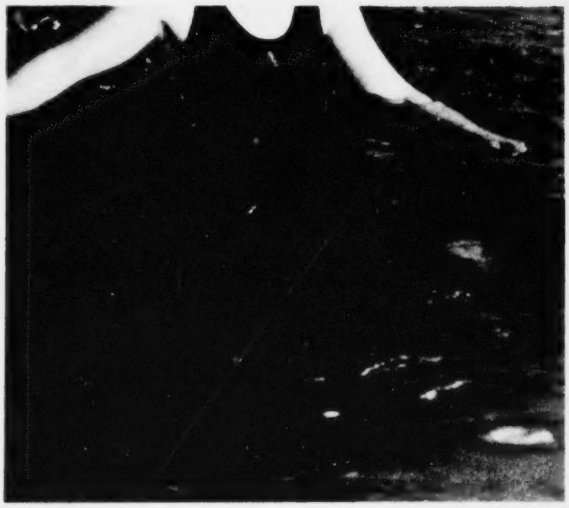
MOBILITY

After the student is relatively confortable in water and can hold the breath for at least a count of seven or eight, it is time to introduce mobility in the prone position.

Developing Mobility in the Prone Position

1. Tell the student that he/she is going to go under water in almost the same way as for timed dunks except that instead of being held upright while under water, he/she is going to be held on the stomach. While supporting the student under the armpits say, ready. Then lift him/her slightly as a breath is taken before placement in a prone position with the face in water. Count to five--or whatever number to which the student agrees--then lift him/her back to vertical by using leverage of your hands under his/her armpits and your outside elbow on his/her buttocks.

Prone floating--hold the swimmer in the float and count to five before picking him up.



Prone floating without assistance--count to five and then pick him up.

2. When the student is comfortable in the prone position while being held, tell him/her that when placed on the stomach you will let go while counting. When reaching the recovery number, put your hands back in place and lift up.

3. When the student can float independently for at least a count of five on the stomach, it is time to try movement while in this position--when you let go the student should try to move the body any way that feels good. The student can kick legs, wiggle the body, move arms, do anything he/she wants. Do not give specific directions about a swimming stroke--if the student had movement control to learn a regular stroke, you would not be using this procedure!

4. Give the student several tries over a period of time to experiment with movements in the prone position. Some things make the student move through the water, some do not; provide verbal feedback about what looks successful. Most individuals have some movement, though it may be random and erratic. This movement is what you want the student to develop in water. If such movement keeps the student relatively close to the surface of the water and in some way, shape or form moves the body forward, it is acceptable.

5. While the student is experimenting with movement be sure to continue to count floating time so that he/she does not have to worry about when to come up for air.

When the student begins to develop some movement is the time to start developing recovery skills. In this case recovery means the position the swimmer uses for getting a breath of air and for resting. The recovery position should not depend on the bottom or side of the pool as the student may not be able to reach either when needing them. For most students recovery is accomplished in a supine position. Very few students float vertically; for those who do, the vertical position can be used for recovery.

Developing a Supine Position

1. The supine position is introduced during water adjustment period. While the student is working on breath control, floating, and movement in the prone position, all water adjustment activities should be continued to keep the swimmer familiar with different positions.

2. Stand behind the student's head, support him/her under the armpits, and tip him/her gradually backwards until the body approximates a supine position. If the student shows a lot of random movement, use your own body for partial support under him/her until he/she gets used to the feeling of being on the back.

3. When the student is relatively comfortable on the back with armpit support it is time to work on correct head position. If the student is already focusing on the ceiling with the head tilted back and the chin out of water, do nothing--this position is fine.

4. If the student is in the supine position with the chin in the water, eyes focused on the feet or lower body, and the head tilted forward, the position needs to be corrected. Release your grasp under one armpit and use that hand to take a light chin pull position--student's chin cupped in the palm of your hand and his/her jaw wedged between your fingers and the fleshy part of your hand. Then tilt the student's head back into the desired position; use the elbow of the chin pull arm in the middle of his/her back--between the shoulder blades--for support and leverage.

The first supine position--hold the student's chin to help position the head.

5. Once the chin pull position has been established, the hand holding the other armpit can be relased and the student can float with just chin support.

6. Gradually loosen the chin pull as the student learns to keep the head back by him/herself.

7. Once the head position is established the chin no longer needs to be held. At this point several means can be used to provide support until the student can float independently...

   ...light support under one or both armpits.

   ...several fingers under the chin as a reminder.

   ...a hand under the back of the neck to provide head stability.

   ...selection of position depends on degree of control the student has in maintaining the supine position.

8. Do not be too concerned if the student's body does not float horizontally on top of water--few people do. If the head is in the correct position let the body seek its own level of buoyancy in water.

9. If the student's arms are flexed at the elbows so that the hands are placed next to or over the head, a reflex pattern on which the student must concentrate to minimize has been activated.

   . Have the student try to keep hands and arms under water.

   . Work gradually to lower the arms so that elbows are close to the body.

   . When the elbows come closer to the body gradually have the student concentrate on extending the elbows.

   . Breaking any reflex pattern takes considerable time and concentration on the part of the student, and even then it may not be possible to achieve the desired position.

10. As the student becomes relaxed in the supine position with some support, gradually lessen the amount of help given until he/she is floating unsupported for brief periods of time. Remind the student to try to stay still and move the body very gently only when necessary for balance. It is all right if some water washes over the student's face in this process. Students need to experience this happening to learn how to adjust balance to movements of water.

Back float and just a hand under the back of the neck as a reminder to keep the head back.

Back floating alone.

Developing Movement in the Supine Position

As in the prone position students need to experiment with various movements to learn what moves them in water while allowing them to keep heads up enough to get air. Keep in mind that an individual's head does not have to be above water all the time. If the student has breathing difficulties because water has been swallowed or inhaled, try to leave him/her on the back while coughing and getting breath. When swimming alone an individual will not have anyone there to pick him/her up so that he/she needs to learn to use the supine position for emergencies. Students can learn to recover breath in the supine position if given chances to learn by doing.

Again, any movement is acceptable. Do not expect a regular stroke to be the end product of the student's efforts. After an individual starts experimenting with movement, your comments should concern how actions can be made more efficient, not how to conform to accepted patterns of swimming.

Developing Recovery

Once the student has established a position on the stomach and a position on the back, he/she needs to learn how to get from one position to the other. The easiest way to do this is by rolling over along the longitudinal axis of the body. This keeps the student relatively horizontal in water and makes it easier to stay afloat. Though more difficult, some students go from front to back by letting their feet sink, tilting their heads back, and letting their bodies pass through the vertical. Usually obese students prefer this method. To teach students to recover by rolling on the horizontal axis--

1. Be sure that both prone and supine positions are well established.

2. Explain to the student that he/she is going to float on the stomach. However, this time instead of you picking him/her up, the student should try to roll over as soon as starting the float. At this point don't tell the individual how to roll over; most students have already done this in some way or other on land and have their own particular methods. Place the student in a prone float, stand close to his/her head and shoulders, and assist him/her complete the roll; most students will probably be able to start alone. A hand under the back of the neck helps the student finish with the head in a position in which he/she can take a breath. As the head clears the water, tell the student to take a breath.

3. After several tries at rolling over you should be able to assess the efficiency of the roll. If the student is having extreme difficulty--

   . Check to see that the student is starting the roll by turning his/her head in the direction he/she wants to go.

   . Have the student kick or move the body in a supine movement pattern as the roll is completed to help him/her get the body into alignment.

   . Use the chin pull at the end of the roll if the individual has difficulty in getting the head back.

   . Try to roll to the opposite side even though one side will probably be much easier to roll toward than the other.

4. After the pattern for the roll is established, practice it in several settings--

   . Immediately after being placed in the prone float position.

- Set the student on your knee--place the bottom of one foot on the thigh of the opposite leg--and elevate him/her above the water slightly. Have the student fall forward and then once in the water, roll over for recovery.

Sitting support--ready to jump-in.

Jumping-in--Mark will then recover to a back float position.

- Have the student sit on the edge of the pool and fall in and roll over for recovery.

- Have the swimmer use a prone movement pattern for a count of five and then roll over for recovery.

- Toss the student from your arms into the water and have him/her roll over for recovery; toss the student into a variety of positions.

5. Continue to provide a helping hand under the neck and a reminder to breathe as soon as the student comes up until this can be done consistently alone.

6. Repeat this whole procedure teaching the student to roll from back to stomach. The procedure includes...

   ...while lying on the back, the student takes a breath;

   ...turns the head in the direction he/she wants to roll;

   ...brings arm opposite to the rolling side across the body--not all students are able to do this;

   ...initiates a prone movement pattern as the body completes the roll.

Provide help if needed by turning the shoulders using the armpit position. Pick the student up as soon as he/she has achieved the prone position.

7. After the student can roll front to back and back to front, chain rolls together--front to swim and back to rest--and have the student swim a short distance.

8. Increase distance gradually and reduce support given until the student is swimming independently.

FINAL STEPS TOWARD INDEPENDENCE

Independence means being able to swim without support from another person or object, being self-sufficient, and being able to take care of one's own needs. Once a student can swim and recover by him/herself, only a few final steps must be taken to make this individual totally independent.

1. Pool entry by falling in from the side of the pool may be sufficient. However, some students find this position extremely difficult without support. Try having students fall directly into the water from their wheelchairs. Pull the chair up to the edge of the pool, swing away footrests, take off the seat belt, set brakes, and have someone hold the chair; now have the student fall forward into the pool. Be sure that as the student falls his/her feet and legs clear the gutter and edge of the pool.

Getting ready to get into the pool.

2. Gradually move further and further away from the student while he/she is swimming until you are no longer looked upon for psychological or physical support. Eventually watch from the deck.

3. Teach an independent resting position at the side of the pool.

- Hang on to the gutter or pool edge--be sure to approach from both prone and supine swimming positions so that the student learns how to grab from both positions.

Practicing a safe position at the side of the pool.

- You may wish to provide a resting platform suspended from the side of the pool and just slightly below water level so that the student can swim up and onto it to rest.

4. Pool exit is always hardest. A deck level hoist that the student can swim into and then be lifted out gives much more independence than having someone lift or carry the student out of the pool.

Independent swimming is possible for almost any person willing to take time and put forth effort. In working with students possessing severe handicapping conditions who have independent swimming as their goal--

- Keep an open mind about what constitutes <u>swimming</u>.
- Allow students to participate in goal setting and decision making about their efforts.
- Provide direct feedback to students about efficiency of their efforts.
- Be willing to let students experiment; even if some things tried don't work out; everyone involved has learned something in the process.
- Take time to practice, repeat, and try again everything that is happening.
- <u>Be committed to the goal of independence--don't settle for anything less</u>.